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Original Research Article

Evidence-Based practice and Quality of Life of Patients with Pancreatitis

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Abstract: ***Introduction:*** Acute pancreatitis is a common digestive system disease, which is caused by abnormal digestive enzymes in the patient's own organs, resulting in inflammation of the pancreatic secretions. Evidence-based care on patients with acute pancreatitis and observes the improvement of patients' compliance and quality of life, aiming at providing effective care for future clinical diagnosis and treatment of acute pancreatitis. ***Material and Methods:*** This is prospective and observational study conducted at Department of General Medicine, Shadan Institute of Medical Sciences over a period of 6 months. The details of endoscopic treatment, such as stent type, number of interventions needed, complications and need for further intervention, were recorded. Similarly, we determined the type of surgical operation and complications. Diagnosis was based on imaging tests including abdominal ultrasound, computed tomography, magnetic resonance imaging (MRI), endoscopic retrograde cholangiopancreatography (ERCP) and endoscopic ultrasonography (EUS), including morphological findings typical of the different modalities. A cytological or histological diagnosis was performed using brush cytology during ERCP, fine needle aspiration biopsy (FNAB) or surgical biopsy/resection. ***Results:*** Total 110 patients were enrolled in the study (Table 1). The mean age of the population was 53.23 years. There were more males than females (80% vs. 20%, respectively). We performed abdominal ultrasonography in 93 patients (84.5%), CT scans in 63 (57.2%), MRI-MRCP in 9 (8.1%), diagnostic ERCP in 41 (37.2%) and endoscopic ultrasonography in 8 (7.2%). Endobiliary stents were implanted in 49% of all endoscopic interventions: of those, a single plastic stent was implanted in 48.1%, multiple plastic stents in 38.8%, a metal stent in 1.8% and a covered metal stent in 1.8%. Surgery was performed in 28 patients (25.4%) from among the population under investigation in the period under examination. Pancreatic decompression was administered in 25% of the cases, while surgical drainage was done in 10.2% in cases where endoscopic drainage was not feasible or in one or two failed endoscopic attempts. The ratio of pancreatic organsparing resection was 28.5%. Bilio-digestive anastomosis was carried out in 25% of the patients. ***Conclusion:*** Our results proved that alcohol consumption and smoking represent a risk factor for the increased need of surgical intervention, suggesting that the elevated number of patients cannot be treated with conservative and less invasive endoscopy. The role of surgery in the treatment of chronic calcifying pancreatitis with biliary obstruction should be highlighted.

Keywords: Chronic pancreatitis, Treatment, Magnetic resonance imaging, Endoscopic retrograde cholangiopancreatography.

INTRODUCTION

Acute pancreatitis is a common digestive system disease, which is caused by abnormal digestive enzymes in the patient's own organs, resulting in inflammation of the pancreatic secretions [1]. The age range of the disease is wide, but most of the people who develop it are adults. According to data, the incidence of acute pancreatitis is 34 cases per 100,000 in the general population and is increasing worldwide, and its incidence increases with age [2]. The main symptoms of acute pancreatitis are sudden onset of upper abdominal pain accompanied by nausea and vomiting, while patients with severe acute pancreatitis may be accompanied by hypotension or shock, leading to organ dysfunction and high mortality [3]. Patients need to be hospitalized immediately for diagnosis and treatment of the disease. Usually, symptomatic treatment and nonsurgical treatment are the main treatment methods [4]. Although most patients with acute pancreatitis have mild conditions and better treatment methods, there are

still some patients with severe acute pancreatitis and the complications after treatment are very difficult [5].

Chronic alcohol ingestion, cholelithiasis, and overeating are usually the main causes of acute pancreatitis. Therefore, choosing an appropriate nursing method is particularly important to improve the rehabilitation of acute pancreatitis and to avoid the continuous deterioration of the disease [6]. A review of previous studies suggested that evidence-based care based on evidence-based medicine is effective in constraining patient self-management and reducing disease complications [7]. Acute pancreatitis represents a disease characterized by acute necro-inflammatory changes in the pancreas, which is histologically characterized by destruction of alveolar cells. It is found that acute pancreatitis secondary to alcohol is more common in men and gallstone pancreatitis is more common in women [8]. At present, mild acute pancreatitis is usually treated with drugs, and the prognosis is generally good. Moderate and severe acute pancreatitis should be treated according to the cause of disease, and if necessary, surgery should be performed, and the prognosis is generally poor due to frequent complications [9].

Besides, there are few clinical studies on the intervention effect of evidence-based care on patients with acute pancreatitis. Therefore, this experiment analyzes the effect of evidence-based care on patients with acute pancreatitis and observes the improvement of patients' compliance and quality of life, aiming at providing effective care for future clinical diagnosis and treatment of acute pancreatitis, so as to increase its recovery rate.

MATERIAL AND METHODS

This is prospective and observational study conducted at Department of General Medicine, Shadan Institute of Medical Sciences over a period of 6 months. The details of endoscopic treatment, such as stent type, number of interventions needed, complications and need for further intervention, were recorded. Similarly, we determined the type of surgical operation and complications.

Demographic data (including age and gender), possible risk factors (frequency and total amount of alcohol consumption, smoking, body mass index (BMI), history of previous pancreatic disease and diabetes mellitus), aetiology, symptoms and clinical signs (such as fever, pain, diarrhoea, jaundice and weight loss), laboratory parameters, imaging techniques, conservative and interventional therapy (such as endoscopy and surgery) and complications were collected and assessed.

Diagnosis was based on imaging tests including abdominal ultrasound, computed tomography, magnetic resonance imaging (MRI), endoscopic retrograde cholangiopancreatography (ERCP) and endoscopic ultrasonography (EUS), including morphological findings typical of the different modalities. A cytological or histological diagnosis was performed using brush cytology during ERCP, fine needle aspiration biopsy (FNAB) or surgical biopsy/resection. The results of the pancreatic functional test were collected to prove the pancreatic exocrine insufficiency related to chronic pancreatitis. The database included information on conservative and interventional treatment of CP. Data on enzyme substitution and anti-diabetic therapy were registered.

Statistical analysis

For descriptive statistics, we calculated the case number and percentage for categorical values. All statistical analyses were carried out with SPSS Statistics v 20.0. A p-value under 0.05 was considered statistically significant.

RESULTS

Total 110 patients were enrolled in the study (Table 1). The mean age of the population was 53.23 years. There were more males than females (80% vs. 20%, respectively).

Table 1: Patients' epidemiological and anamnestic data

		Number of patients (n)	Percentage (%)
Gender	Male	87	80
	Female	23	20
Alcohol consumption	Never	48	43.6
	Occasionally	23	20.9
	Regularly	39	35.4

Smoking	>20 cigarettes/day	23	20.9
	10–20 cigarettes/day	32	29.0
	<10 cigarettes/day	9	8.1
	occasionally	3	2.7
	never	43	39.0

Twenty-three patients (20.9%) smoked more than 20 cigarettes per day. Alcohol consumption was reported occasionally in 23 patients (20.9%), whereas 23 patients (20.9%) drank alcohol daily.

Table 2: Imaging modalities in the diagnostics of chronic pancreatitis

Modality	Number of patients (n)	Percentage (%)
Ultrasonography	93	84.5
CT Scan	63	57.2
MRI-MRCP	9	8.1
ERCP	41	37.2
EUS	8	7.2

In table 2, we performed abdominal ultrasonography in 93 patients (84.5%), CT scans in 63 (57.2%), MRI-MRCP in 9 (8.1%), diagnostic ERCP in 41 (37.2%) and endoscopic ultrasonography in 8 (7.2%).

Table 3: Endoscopic treatment

Type of intervention		Number of patients (n)	Percentage (%)
ERCP-EST		13	11.8
Endobiliary stent	**total**	54	49.0
	Single plastic stent	26	48.1
	Multiple plastic stent	21	38.8
	Metal stent	1	1.8
	Covered metal stent	1	1.8
Wirsung duct stent		5	4.5
Wirsung and endobiliary stent		1	0.9
Pseudocyst drainage		2	1.8

In table 3, endobiliary stents were implanted in 49% of all endoscopic interventions: of those, a single plastic stent was implanted in 48.1%, multiple plastic stents in 38.8%, a metal stent in 1.8% and a covered metal stent in 1.8%.

Table 4: Surgical treatment

Type of surgery	Number of patients (n)	Percentage (%)
Pancreatic decompression	7	25
Surgical drainage	3	10.2
Organ sparing resection	8	28.5
Bilio digestive anastomosis	7	6.3
Other	3	2.7

In table 4, surgery was performed in 28 patients (25.4%) from among the population under investigation in the period under examination. Pancreatic decompression was administered in 25% of

the cases, while surgical drainage was done in 10.2% in cases where endoscopic drainage was not feasible or in one or two failed endoscopic attempts. The ratio of pancreatic organsparing resection was 28.5%. Bilio-digestive anastomosis was carried out in 25% of the patients.

DISCUSSION

Chronic pancreatitis (CP) is an irreversible inflammatory process characterized by the destruction of the pancreatic parenchyma and ductal structures [7]. CP is the most common cause of PEI in adults [8]. Up to 85% of patients with advanced CP have PEI [9]. The diagnosis of CP is clear in patients with chronic abdominal pain with overt exocrine or endocrine dysfunction along with imaging demonstrating pancreatic atrophy, ductal changes or calcification [10]. Imaging can show diffuse pancreatic calcification. Computed tomography (CT) using pancreas protocol and magnetic resonance Imaging (MRI) with magnetic resonance cholangiopancreatography (MRCP) with or without secretin, are vital in the initial evaluation of suspected PEI. Cross sectional imaging should be obtained in adult patients with steatorrhea to rule out pancreatic cancer and evaluate for structural changes of the pancreas. [11]

Endoscopic ultrasound (EUS) provides detailed images of the pancreas and is appropriate in cases where the diagnosis is elusive or contraindications exist for MRI or CT. On EUS, parenchymal features in CP include hyperechoic foci, hyperechoic strands, lobularity, and cysts. Ductal features of CP on EUS include main duct dilation, duct irregularity, hyperechoic duct margins, visible side branches, and stones [12]. In CP, PERT reduces steatorrhea, enables normal dietary fat intake and allows for weight gain [13]. Randomized controlled trials have shown PERT improves steatorrhea, decreased stool frequency and fecal fat [14]. There is some evidence that non- enteric formulations (viokase) of PERT improves pain in CP1 but this is not conclusive base on the entire body of evidence. Non-enteric formulations must be given with acid suppression to prevent enzyme degradation. PERT is required indefinitely in CP once exocrine insufficiency begins. [15]

Pancreatic cancer causes PEI when there is loss of pancreatic parenchyma and/or obstruction of the main pancreatic duct. Surgical resection or radiation for the treatment of pancreatic cancer also contributes to PEI1. It is important for clinicians to recognize that PEI is near universal in patients with locally advanced or metastatic pancreatic cancer, with as high as 90–100% of patients affected [16]. Patients with weight loss, symptoms of malabsorption, or malnutrition should receive PERT. This is an important patient population needing PERT that is frequently forgotten. In one study, 50% of patients with symptoms of PEI were not treated with PERT [17]. The benefit of PERT in patients with pancreatic cancer has been studied with conflicting results. PERT is believed to improve quality of life and maintains weight in patients with pancreatic cancer [18].

In a randomized controlled trial of patients with unresectable cancer in the head of the pancreas after biliary stenting, PERT prevented weight loss [19]. In a 2016, prospective, double-blind, randomized, placebo-controlled trial, PERT failed to show a reduction in weight loss or survival benefit in patients with unresectable pancreatic cancer [20]. Other studies however, have shown survival benefits of PERT in patients with unresectable disease [21]. In a 2018 retrospective analysis of patients with unresectable pancreatic cancer and PEI, PERT was associated with longer survival especially in patients with significant weight loss [22]. Despite conflicting data, PERT remains an important part of the supportive and palliative care of these patients because it improves quality of life [23].

CONCLUSION

Our results proved that alcohol consumption and smoking represent a risk factor for the increased need of surgical intervention, suggesting that the elevated number of patients cannot be treated with conservative and less invasive endoscopy. The role of surgery in the treatment of chronic calcifying pancreatitis with biliary obstruction should be highlighted.

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